

## REMARKS

Reconsideration of the claims in light of the following remarks is requested. Upon entry of this amendment Claims 1, 2, 4 – 6, 8 – 10, and 12 are pending and under consideration. Claims 3, 7 and 11 have been canceled. Claims 1, 5, and 9 have been amended to include the features of claims 3, 7, and 11, respectively. Applicant respectfully submits that no new matter is added by this amendment.

Applicants have not dedicated or abandoned any unclaimed subject matter and moreover have not acquiesced to any rejections made by the Patent Office. Applicants reserve the right to pursue prosecution of any presently excluded claim embodiments in future continuation and/or divisional applications.

### Claim Rejections - 35 U.S.C. § 102

The Examiner rejects Claims 1 – 3 under 35 U.S.C. § 102(e) as allegedly anticipated by Metzner (U.S. Patent No. 7,067,439) ("*Metzner I*"). Applicants respectfully traverse, and submit that the amended claims are patentable over the cited reference.

For an anticipation rejection under 35 U.S.C. § 102 to be proper, a single reference must disclose each and every element of a claim. *In re Paulsen*, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994); M.P.E.P. § 2131.

Claims 1, 5 and 9 have been amended to recite a metal alkyl amide formula of:  $M(NR^1R^2)_4$ , wherein M represents a Group 4 metal,  $R^1$  is an ethyl unit, and  $R^2$  is a methyl unit.

*Metzner I* specifically teaches a metal organic compound comprised of tetrakis(diethylamido) hafnium (TDEAH). *Metzner I* does not teach a metal alkyl amide formula where  $R^1$  is an ethyl unit and  $R^2$  is a methyl unit as required by Applicants amended claims. *Metzner I* mentions that  $R'$  and R may be the same group or may be different groups. Nowhere does *Metzner I* teach or suggest that one R group should be an ethyl unit and one R group should be a methyl group. In fact, all of the detailed description and examples in *Metzner I* are directed solely and specifically to TDEAH, which contains two ethyl groups. Thus, *Metzner I* does not teach each and every element of the pending claims. Therefore, the Applicant respectfully requests that the rejections to claims 1 – 3 be withdrawn.

**Claim Rejections - 35 U.S.C. § 103**

The Examiner reject claims 5 – 12 under 35 U.S.C. § 103 (a) as allegedly obvious over *Metzner I* in view of Metzner (U.S. Patent No. 6,858,547) (“*Metzner II*”). Applicants respectfully traverse and submit that amended claims are patentable over the cited references.

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); see also *KSR Int'l Co. V. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). “Section 103 forbids issuance of a patent when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR*, 127 S.Ct. at 1734 (internal quotations omitted).

As discussed above, *Metzner I* does not disclose the specific metal alkyl amide formula where R<sup>1</sup> is an ethyl unit and R<sup>2</sup> is a methyl unit as required in the amended claims. Applicants respectfully submit that *Metzner II* adds nothing more.

As the Examiner can appreciate, precursor chemistry in ALD processing is complicated and different processes or applications have different precursor requirements. Even different types of deposition systems and equipment will require different process conditions and/or precursor chemistry. It is not a simple matter to substitute one chemical precursor for another. Many variables must be considered. Significant development and experimentation is required to achieve a method that produces desirable films. Applicant respectfully submits that the precursor chemistry recited in Applicants amended claims is distinct and non-obvious over the *Metzner I and II* references.

This can be seen for instance in *Metzner I* where it is stated that a pulse time of 12 seconds or less at a pressure from 0.1 Torr to 10 Torr is used to deposit an adequate amount of TDEAH on the substrate surface. Col. 2, lines 33 – 35, and Col 3, lines 23 – 25. In contrast, the present invention utilizes a pulse time from about 0.1 to 5 seconds at a pressure of about 0.1 to 5 Torr. See page 4, lines 9 – 18. Applicants submit that it is not trivial or obvious to select a precursor for a particular ALD method.

Moreover, Applicant respectfully submits that the combination of *Metzner I* and *II* does not arrive at the amended claims.

In addition, Applicant respectfully submits that neither *Metzner I* nor *II*, either alone or in combination, teach or reasonably suggest metal oxide films of zirconium and titanium formed by a metal alkyl amide of the formula where  $R^1$  is an ethyl unit and  $R^2$  is a methyl unit, as recited in dependent claims 6 and 10.

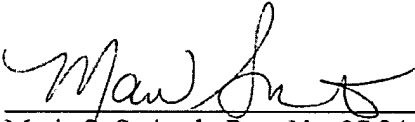
For the foregoing reasons, *Metzner I* and *II*, either alone or in combination, fail to teach each and every limitation of the claimed invention. Therefore, the Applicant respectfully requests that the rejections to claims 5 – 12 be withdrawn.

**CONCLUSION**

Based on the foregoing, Applicant submits that Claims 1, 2, 4 – 6, 8 – 10, and 12 are in condition for allowance. An early indication of the same is therefore respectfully requested. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned attorney at the telephone number listed below. No fees beyond those being submitted concurrently herewith are believed due. However, the Commissioner is authorized to charge any additional required fees, or credit any overpayment, to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (Order No. 067538-5170-US).

Respectfully submitted,

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